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**BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES**

Application Number: 10/592,017  
Filing Date: September 07, 2006  
Appellant(s): KUEBELBECK, ARMIN

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Brion P. Heaney  
For Appellant

**EXAMINER'S ANSWER**

This is in response to the appeal brief filed November 17, 2009 appealing from the Office action mailed October 1, 2009.

**(1) Real Party in Interest**

A statement identifying by name the real party in interest is contained in the brief.

**(2) Related Appeals and Interferences**

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

**(3) Status of Claims**

The statement of the status of claims contained in the brief is correct.

**(4) Status of Amendments After Final**

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

**(5) Summary of Claimed Subject Matter**

The summary of claimed subject matter contained in the brief is correct.

**(6) Grounds of Rejection to be Reviewed on Appeal**

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

**WITHDRAWN REJECTIONS**

The following grounds of rejection are not presented for review on appeal because they have been withdrawn by the examiner. Teller et al. in view of Su for claims 1, 6-19 and 21-28 and Teller et al. in view of Su and Anselmann et al. for claim 2.

**(7) Claims Appendix**

The copy of the appealed claims contained in the Appendix to the brief is correct.

**(8) Evidence Relied Upon**

|              |                  |         |
|--------------|------------------|---------|
| EP1036763    | Teller et al.    | 09-2000 |
| 2003/0124564 | Trau et al.      | 07-2003 |
| 4,775,52     | Unger et al.     | 10-1988 |
| 5,626,964    | Blizzard et al.  | 05-1997 |
| 6,3,02,926   | Anselmann et al. | 10-2001 |

**(9) Grounds of Rejection**

The following ground(s) of rejection are applicable to the appealed claims:

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

**Claims 1, 4, 6-19, 20-21, and 22-28** are rejected under 35 U.S.C. 103(a) as being unpatentable over EP 1036763 to Teller et al. in view of U.S. Patent No. 5,626,964 to Blizzard et al.

Regarding claims 1, 4, 7-19 and 22-26, Teller et al. clearly disclose the preparation of monodispersed polysilicic acid particles (i.e. silica particles) by simultaneous or step-wise dosage of precursor materials such as tetraalkoxysilane and terminal silane fluorescent dye in hydrolysis medium of alcohol, ammonium and water (Abstract, [0001]-[0007]); the reference is drawn to polycondensation between the

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precursor tetraalkoxysilane and terminal silylated (fluorescence) coloring material ([0013]). Teller et al. disclose that the silica particles obtained have a size of from 0.05µm to 10µm ([0006]). The reference, also, discloses that the medium comprises water, alcohol (i.e. the solubilizer) and ammonia (i.e. base) ([0007] and Examples). Moreover, Teller et al. teach the use of tetraethoxysilane or TEOS as the tetraalkoxysilane used (Examples). Additionally, the reference discloses conducting the polycondensation hydrolysis in a temperature range of 40°C to 70°C ([0013]). It is noted that there is overlapping ranges of temperature with the ones instant claimed; overlapping ranges have been held to establish *prima facie* obviousness. See MPEP § 2144.05.

Furthermore, Teller et al. disclose a substantially identical structure for the terminally silylated (fluorescent) dye as that recited in claims 12-16 ([0007]-[0012]). In addition, Teller et al. disclose that such particles are used in different modifications in the molecular biology, purification of nucleic acid and proteins, as solid phase for the investigation of molecular recognition phenomena ([0002]).

With reference to the production of “non-porous particles”, it is noted that since the reference does not disclose the production of porous particles; therefore, it is seen to read on the instant limitation absence evidence to the contrary.

Teller et al. although disclosing the use of base in the polycondensation hydrolysis process of making silica particles, do not expressly disclose the use of a base such as ethylenediamine or aminoethanol.

However, Blizzard et al. disclose the hydrolysis and condensation of tetraethoxysilane which is initiated by water in the presence of ethanolamine (column 7, line 60 to column 8, line 14) and pentaerythritol tetra-acrylate which is a ketone (i.e. solubilizer). Therefore, it would have been obvious to one of ordinary skill in the art to modify Teller et al. in order to include the use of a base such as ethanolamine in the medium used for the process of hydrolysis and condensation of tetraalkoxysilane as that taught by Blizzard et al. motivated by the fact that ammonia and ethanolamine, as shown in Teller et al. and Blizzard et al. have been both utilized in hydrolysis and condensation processes of tetraalkoxy silane in the presence of water; therefore, they can be seen as functionally equivalent. It is noted that the substitution of the functionally equivalent compounds is well within the scope of the skilled artisan absence clear and specific evidence showing why ethanolamine (i.e. base) of Blizzard et al. can not, under any circumstances, be substituted for the ammonia (i.e. base) of Teller et al. It is, additionally, noted that the example of Blizzard et al. (Example presented in column 7, lines 60 to column 8, line 14) is pertinent to the art of Teller et al.

Regarding claims 6, 21 and 27-28, Teller et al. in Example 1, disclose the use of 76.6 ml ethanol, 13.6 ml 25% ammonia, 20 ml water and 11.2 ml TEOS; using the density of said components, the content of said components in weight, and consequently, the weight percentages of said components were calculated and found to be 64% ethanol, 2.4% ammonia, 21% water, and 11% TEOS. It is noted that there is overlapping ranges of said values with the ones instantly claimed.

Again, it would have been obvious to substitute ethanolamine for ammonia in Teller et al. since the substitution of the functionally equivalent compounds is well within the scope of the skilled artisan absence clear and specific evidence showing why ethanolamine (i.e. base) of Blizzard et al. can not, under any circumstances, be substituted for the ammonia (i.e. base) of Teller et al. considering the fact that Blizzard et al. is reasonably pertinent to the particular problem with which the applicants were concerned.

Regarding claim 20, Blizzard et al. in Example 1 (columns 7-8) disclose 10.24g TEOS, 0.775 g ethanolamine, 73.7 g pentaerythritol tetra-acrylate which is a ketone (i.e. solubilizer) and 4.36 g water; thus, the weight percentages of each component is found to be about 11% of TEOS, 0.87% of ethanolamine, 82% of pentaerythritol tetra-acrylate, and 4.89% of water. There are overlapping ranges of said components with the ones instantly claimed; overlapping ranges have been held to establish *prima facie* obviousness. See MPEP § 2144.05.

As shown above, Blizzard et al. is reasonably pertinent to the particular problem with which the applicants were concerned, and it is obvious to substitute ethanolamine for ammonia since the substitution of the functionally equivalent compounds is well within the scope of the skilled artisan absence clear and specific evidence showing why ethanolamine of Blizzard et al. can not, under any circumstances, be substituted for the ammonia (i.e. base) of Teller et al. considering the fact that Blizzard et al. is reasonably pertinent to the particular problem with which the applicants were concerned.

In fact, Blizzard et al. utilize the same group of compounds to conduct the hydrolysis of TEOS in a medium. Therefore, the combination of Teller et al. in view of Blizzard et al. is seen to read on the limitation of instant claims 6, 20-21 and 27-28 as detailed out in the above paragraph as well.

**Claim 2** is rejected under 35 U.S.C. 103(a) as being unpatentable over Teller et al. in view of Blizzard et al. as applied to claim 1 above, and in further view of U.S. Patent No. 6,302,926 to Anselmann et al.

The combination of Teller et al. in view of Blizzard et al. discloses the preparation of monodispersed polysilicic acid particles (i.e. silica particles) by simultaneous or step-wise dosage of precursor materials such as tetraalkoxysilane and terminal silane fluorescent dye in hydrolysis medium of alcohol, ammonium and water wherein the ammonium base may be replaced by another base such as aminoethanol as detailed out above.

However, with reference to bringing the particle size to the desired size by continuous metered addition of corresponding silane (i.e. tetraalkoxysilane), it is noted that Teller et al. disclose simultaneous or step-wise dosage of precursor materials such as tetraalkoxysilane and terminal silane fluorescent dye in the medium. Although said reference may not expressly disclose that metering the addition of corresponding silane in order to control the particle size of silica, it is found obvious to control the particle size of silica using metering the addition of tetraalkoxysilane or corresponding silane as that evidenced by Anselmann et al. (column 3, lines 1-10). It is noted that Anselmann et al.

is drawn to the same field of art as evidenced all throughout the reference and disclose the production of monodispersed silica particles by hydrolysis polycondensation of tetraalkoxysilane. Therefore, it would have been obvious to modify Teller et al. in combination with Blizzard et al. in order to include the particle size control of silica through metering the addition of tetraalkoxysilane motivated by the fact that Anselmann et al. clearly discloses that metering the addition of tetraalkoxysilane into the medium would control the particle size of silica to bring it to the desired particle size; furthermore, motivated by the fact that Teller et al. disclose simultaneous or step-wise dosage of precursor materials such as tetraalkoxysilane and terminal silane fluorescent dye in the medium.

**Claims 1, 4, 6-8, 10-18, 20-21 and 24-28** are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent Application Publication No. 2003/0124564 to **Trau et al.** in view of Blizzard et al.

Regarding claims 1, 4, 7-8, 10-18, and 24-26, Trau et al. disclose the Stöber process through which monodispersed silica particles are formed in a hydrolysis of tetraethyl orthosilicate (TEOS) in a solution of ethanol, water, and ammonia having a maximum particle size of approximately 3 microns ([0010]-[0012]). Moreover, the reference discloses that Stöber process allows the incorporation of fluorescent dyes into the silica network ([0012]; Figure 3). As can be seen, the structure of Figure 3 clearly teaches the limitation of instant claims 10-16; for example, R<sup>1</sup>, R<sup>2</sup>, and R<sup>3</sup> are identical

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and are methoxy groups (i.e. alkoxy groups), and part of the structure containing carbon single bonded to two nitrogens and double bonded to sulfur is B (i.e. aminothiocarbonyl group). Furthermore, A<sup>1</sup> is the two carbon chain connecting the Si to N of the aminothiocarbonyl group. In addition, the part of the structure which corresponds to the three rings corresponds to A<sup>2</sup> which would impart color (i.e. dye) upon exposure to light. Finally, the segment of one benzene ring bonded to a carboxylic group is C.

With reference to the production of "non-porous particles", it is noted that since the reference does not disclose the production of porous particles, therefore, this is seen to read on the instant limitation (i.e. non-porous silica) absence evidence to the contrary.

Trau et al. although disclosing the use of a base in the Stöber process, do not expressly disclose that said base may be ethylenediamine or aminoethanol.

However, Blizzard et al. disclose the hydrolysis and condensation of tetraethoxysilane which is initiated by water in the presence of ethanolamine (column 7, line 60 to column 8, line 14). Therefore, it would have been obvious to one of ordinary skill in the art to modify Trau et al. in order to include the use of a base such as ethanolamine in the medium used for the process of hydrolysis and condensation of tetraalkoxysilane as that taught by Blizzard et al. motivated by the ammonia and ethanolamine, as shown in Trau et al. and Blizzard et al. respectively, have been both utilized in hydrolysis and condensation processes of tetraalkoxy silane in the presence of water; therefore, they can be seen as functionally equivalent. It is noted that the substitution of the functionally equivalent compounds is well within the scope of the

skilled artisan absence clear and specific evidence showing why ethanolamine (i.e. base) of Blizzard et al. can not, under any circumstances, be substituted for the ammonia (i.e. base) of Trau et al. absence clear and specific evidence showing the contrary. It is, additionally, noted that the example of Blizzard et al. is clearly pertinent to the art of Trau et al.

Regarding claims 6, 20-21 and 27-28, Blizzard et al. in Example 1 (columns 7-8) disclose 10.24g TEOS, 0.775 g ethanolamine, 73.7 g pentaerythritol tetra-acrylate which is a ketone (i.e. solubilizer), and 4.36 g water; thus, the weight percentages of each the components is found to be about 11% TEOS, 0.87% ethanolamine, 82% pentaerythritol tetra-acrylate, and 4.89% water. There are overlapping ranges of said components with the ones instantly claimed; overlapping ranges have been held to establish *prima facie* obviousness. See MPEP § 2144.05.

As shown above, Blizzard et al. is from the same field of endeavor and it is obvious to substitute ethanolamine for ammonia since the substitution of the functionally equivalent compounds is well within the scope of the skilled artisan absence clear and specific evidence showing why ethanolamine of Blizzard et al. can not, under any circumstances, be substituted for the ammonia (i.e. base) of Trau et al. considering the fact that Blizzard et al. is reasonably pertinent to the particular problem with which the applicants were concerned.

In fact, Blizzard et al. utilize the same group of compounds to conduct the hydrolysis of TEOS in a similar medium. Therefore, the combination of Trau et al. in

view of Blizzard et al. is seen to read on the limitation of instant claims 6, 20-21 and 27-28 as detailed out in the above paragraph as well.

**Claim 2** is rejected under 35 U.S.C. 103(a) as being unpatentable over Trau et al. in view of Blizzard et al., as applied to claim 1 above, and in further view of U.S. Patent No. 6,302,926 to Anselmann et al.

The combination of Trau et al. in view of Blizzard et al. disclose the production of monodispersed silica particles using Stöber process through which monodispersed silica particles are formed in a hydrolysis of tetraethyl orthosilicate (TEOS) in a solution of ethanol, water, and ammonia having a maximum particle size of approximately 3 microns wherein the ammonia base may be replaced by another base such as aminoethanol as detailed out above.

With reference to bringing the particle size of silica to a desired size by continuously metering the addition of corresponding silane (i.e. tetraalkoxysilane), although the references may not expressly disclose the continuously metering the addition of corresponding silane to control the particle size to bring it to the desired particle size, this is found obvious to control the particle size by doing so since it is evidenced by Anselmann et al. (column 3, lines 1-10) which is drawn to the same field of art as can be seen all throughout the reference. In other words, Anselmann et al. disclose the production of monodispersed silica particles by hydrolysis polycondensation of tetraalkoxysilane. Therefore, it would have been obvious to modify Trau et al. in combination with Blizzard et al. in order to disclose the metering addition of

tetraalkoxysilane into the medium to control the particle size of silica motivated by the fact that Anselmann et al. clearly disclose that metering addition of tetraalkoxysilane into the medium would control the particle size so to bring it to a desired particle size.

**Claim 19** is rejected under 35 U.S.C. 103(a) as being unpatentable over Trau et al. in view of Blizzard et al. as applied to claim 1 above, and in further view of Teller et al.

The combination of Trau et al. and Blizzard et al. discloses the production of monodispersed silica particles using Stöber process through which monodispersed silica particles are formed via hydrolysis of tetraethyl orthosilicate (TEOS) in a solution of ethanol, water, and ammonia wherein the silica particles have a maximum particle size of approximately 3 microns, and wherein ammonia may be replaced by other amine bases such as aminoethanol (i.e. ethanolamine) as detailed out above.

However, said references do not expressly disclose that the produced silica particles may be utilized in any of the areas disclosed in instant claim 19.

Nevertheless, it would have been obvious to modify Trau et al. in view of Blizzard et al. to disclose the use of said monodispersed silica particles of smaller than 3 microns produced by Stöber process in an area of claim 19 such as a solid phase for the investigation of molecular recognition phenomena as that taught by Teller et al. motivated by the fact that Teller et al. disclose that such particles are used in different modifications in the molecular biology, purification of nucleic acid and proteins, as solid phase for the investigation of molecular recognition phenomena (Teller et al. [0002]),

and further, motivated by the fact that Trau et al. and Teller et al. are from the same field of endeavor. Thus, it would have been obvious to utilize the silica particles of Trau et al. in view of Blizzard et al. in the area disclosed by Teller et al. since the particles of the two references are produced by substantially similar process and are of substantially overlapping particle size.

Claims 1-2, 5, 7-9, 17-19, and 22-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No. 4,775,520 to Unger et al. in view of Blizzard et al.

Regarding Claims 1-2, 5, 7-9, 17-19, and 22-23, Unger et al. teach a process through which monodispersed non-porous spherical SiO<sub>2</sub> particles are prepared by, first a sol or primary particles which is prepared by hydrolytic polycondensation of tetraalkoxysilanes in an aqueous/alcoholic ammoniacal medium. Then, the SiO<sub>2</sub> particles are converted to the desired particle size by a continuous measured addition of tetraalkoxysilane or organotrialkoxysilane controlled by the extent of the reaction (Abstract; column 3, lines 5-16; column 4, lines 3-7 and 29-40). Unger et al. disclose the use of alcohol (i.e. solubilizer) such as methanol, ethanol and others, water and ammonia in the process (column 3, lines 46-51; column 4, lines 3-6). Unger et al. teach that suitable tetraalkoxysilanes are esters of aliphatic alcohols containing 1-5 C atoms such as, for example, methanol, ethanol, n- or i-propanol; additionally, Unger et al. discloses that the especially preferred one is tetraethoxysilane (column 3, lines 30-44). Unger et al. teach maintaining the temperature of the process between about 35°C to

75°C (column 4, lines 19-20). Unger et al. disclose obtaining SiO<sub>2</sub> particles with mean particle diameter of 0.05 and 10 microns (column 2, lines 41-43).

In addition, Unger et al. teach that the use of said silica in sorption materials in chromatography of biological molecules of high molecular weight such as, for instance, proteins and nucleic acids (column 3, lines 20-27).

Unger et al. although disclosing the use of a base in said process of making silica particles, do not expressly disclose the use of a base such as ethylenediamine or aminoethanol.

However, Blizzard et al. disclose the hydrolysis and condensation of tetraethoxysilane which is initiated by water in the presence of ethanolamine and pentaerythritol tetra-acrylate which is a ketone (i.e. solubilizer) (column 7, line 60 to column 8, line 14). Therefore, it would have been obvious to one of ordinary skill in the art to modify Unger et al. in order to include the use of a base such as ethanolamine in the medium used for the process of hydrolysis and condensation of tetraalkoxysilane as taught by Blizzard et al. motivated by fact that ammonia and ethanolamine, as shown in Unger et al. and Blizzard et al. respectively, have been both utilized in hydrolysis and condensation processes of tetraalkoxy silane in the presence of water; therefore, they can be seen as functionally equivalent. It is noted that the substitution of the functionally equivalent compounds is well within the scope of the skilled artisan absence clear and specific evidence showing why ethanolamine (i.e. base) of Blizzard et al. can not, under any circumstances, be substituted for the ammonia (i.e. base) of

Unger et al. It is, additionally, noted that both references are drawn to pertinent filed of art, hydrolysis condensation of tetraalkoxysilane.

**Claims 10-16 and 24-26** are rejected under 35 U.S.C. 103(a) as being unpatentable over Unger et al. in view of Blizzard et al. as applied to claim 1 above, and further in view of Trau et al.

Regarding claims 10-16 and 24-26, the combination of Unger et al. in view of Blizzard et al. as detailed above, disclose a method for the preparation of non-porous spherical SiO<sub>2</sub> particles by hydrolytic polycondensation of tetraalkoxysilanes in an aqueous/alcoholic ammoniacal medium, in which method a sol of primary particles is first produced and the SiO<sub>2</sub> particles obtained are then converted to the desired size by a continuous measured addition of tetraalkoxysilane controlled by the extent of the reaction wherein the amine base compound utilized in said process may be aminoethanol as detailed out above.

Even though Unger et al. teach that the use of said silica in sorption materials in chromatography of biological molecules of high molecular weight such as, for instance, proteins and nucleic acids, Unger et al. in view of Blizzard et al. do not disclose the specific limitations of claims 12-16 with reference to a fluorescent dye and its structure.

Trau et al. disclose the Stöber process through which monodispersed silica particles are formed in a hydrolysis of tetraethyl orthosilicate (TEOS) in a solution of ethanol, water, and ammonia having a maximum particle size of approximately 3

microns ([0010]-[0012]). Moreover, the reference discloses that Stober process allows the incorporation of fluorescent dyes into the silica network ([0012]; Figure 3). ). As can be seen, the structure of Figure 3 clearly teaches the limitation of instant claims 10-16; for example, R<sup>1</sup>, R<sup>2</sup>, and R<sup>3</sup> are identical and are methoxy groups (i.e. alkoxy groups), and part of the structure containing one carbon bonded to two nitrogens through single bonds and bonded to sulfur through a double-bond is B (i.e. aminothiocarbonyl group). Furthermore, A<sup>1</sup> is the two carbon chain connecting the silicon to nitrogen of B. In addition, the part of the structure of which corresponds to the three rings corresponds to A<sup>2</sup> which would impart color (i.e. dye) upon exposure to light. Finally, the segment of one benzene ring bonded to a carboxylic group is C.

Therefore, at the time of the invention, it would have been obvious to one of ordinary skill in the art to modify Unger et al. in view of Blizzard et al. in order to include the incorporation of a fluorescent dye as that taught by Stöber process in Trau et al. motivated by the fact that Stöber process is on the preparation of monodispersed silica particles produced by the same method as disclosed by Unger et al. which would result in particles having overlapping ranges with the ones disclosed by Unger et al.

#### **(10) Response to Argument**

The rejection of claims 1, 6-19 and 21-28 under Teller et al. in view of Su was inadvertently not withdrawn in the advisory action even though the rejection was rendered moot due to the amendment to claim 1.

Therefore, said rejection and any rejection based on Teller et al. in view of Su is hereby withdrawn, and arguments relating to such are moot.

Furthermore, it is to be noted that Teller et al. reference (EP 1036763) was cited by Appellants in the IDS filed 09/07/2006.

Appellants have argued that Blizzard et al. is not directed to the production of polysilicic acid particles (i.e. silica particles) by hydrolytic polycondensation, and that said reference is drawn to the formation of a radiation curable silicone resin.

The Examiner, respectfully, submits that while the Blizzard et al., as a whole, may be drawn to the formation of a radiation curable silicone resin, the reliance on the disclosure of Blizzard et al. was based on Example 1, column 7, line 60 to column 8, line 5 of said reference as expressly indicated in the Office action, and said example clearly disclose mixing tetraethoxysilane with ethanolamine and pentaerythritol tetraacrylate under conditions of constant stirring to which certain other components are added; the reference, further goes on to disclose that “hydrolysis and condensation” of the tetraalkoxysilane was initiated. Therefore, even though the reference may, overall, be directed to the formation of a radiation curable silicone resin, in Example 1, column 7, line 60 to column 8, line 5, it clearly discloses the hydrolysis and condensation of tetraalkoxysilane in the present of ethanolamine (i.e. base) and pentaerythritol tetraacrylate (i.e. ketone). This is very similar to the process of primary references used above (i.e. Teller et al., Trau et al., and Unger et al.) all of which disclose hydrolysis and

condensation of tetraalkoxysilane in the presence of a base. It should be noted that no other section of Blizzard et al., specially no section referring to the formation of a radiation curable silicone resin or the use of amine alcohol as an agent in that process was relied on.

Same response is valid for same arguments drawn to Blizzard et al. as being drawn to the formation of a radiation curable silicone resin for the rejections involving the combinations of Trau et al. in view of Blizzard et al. and Unger et al. in view of Blizzard et al.

Appellants have argued that Blizzard et al. do not employ pentaerythritol tetraacrylate (i.e. ketone) as a solubilizer.

The Examiner, respectfully, submits that the reference uses the very same ketone that appellants claim in instant claims and in their invention in a very similar process; therefore, an effect such as solubilizing is expected to follow for the very same compound claimed by appellants. In other words, if appellants claim that pentaerythritol tetraacrylate (i.e. ketone) works as a solubilizer in their invention and claims, how could the very exact compound would not impart that effect in the reference whereas it would impart it in the appellants' invention.

Appellants have argued that nothing within the rejection indicates that either Teller et al. or Blizzard et al. teach that ammonia and ethanolamine are functionally equivalent.

It is to be noted that while two nitrogen-based bases, ammonia and ethanolamine, are used in substantially similar processes for the same purpose (i.e. hydrolysis and condensation of tetraalkoxysilane), as detailed above, said compounds (i.e. ammonia and ethanolamine) are considered functionally equivalent absence clear and specific evidence showing the contrary.

It should be noted that Appellants have not submitted any hard and/or tangible evidence as to why ethanolamine of the process of Example 1 of Blizzard et al. cannot be used in the hydrolysis and condensation process of Teller et al.

Same response is valid for the arguments drawn to the rejections involving the combination of Trau et al. in view of Blizzard et al. and Unger et al. in view of Blizzard et al. in relation to the appellants' argument that ammonia and ethanolamine are not functionally equivalent.

Appellants have argued that ethanolamine and ammonia impart different effects.

The Examiner disagrees and, respectfully, submits that ethanolamine in Blizzard et al. imparts the same effect as that of ammonia in Teller et al. specially when Blizzard noting the column 7, line 60 to column 8, line 5 (of Blizzard et al.) where it talks about the hydrolysis and condensation of tetraalkoxysilane. The very final result obtained from Example 1 of Blizzard et al., at the very end, may be different, but the intermediate result clearly is drawn from a hydrolysis and condensation of tetraalkoxysilane in the presence of ethanolamine and pentaerythritol tetraacrylate. Such process of hydrolysis

and condensation of tetraalkoxysilane is also disclosed by Teller et al. as detailed out above. Thus, ammonia and ethanolamine are not seen to impart different effects.

Same response is valid for the arguments drawn to the rejections involving the combination of Trau et al. in view of Blizzard et al. and Unger et al. in view of Blizzard et al. in relation to the appellants' argument that ammonia and ethanolamine impart different.

Appellants have argued that bases are not equivalent for the process of appellants' claimed invention, as can be seen in Example 1, Table 1 at page 15 of the specification, and that ammonia has many disadvantages as shown in said Table, and thus, monodispersed silica cannot be obtained using ammonia.

The Examiner, respectfully, submits that based on Table 1, page 15 of the specification, the use of ammonia as a base would also result in mono-dispersed particles. Thus, the argument is not found persuasive.

Appellants have argued that the absence of porous particles in Teller et al. does not constitute an express disclosure of the opposite feature.

It is to be noted that Teller et al. is drawn to a very similar process as that of instant invention and the combination of Teller et al. in view of Blizzard et al. makes the substitution of the base obvious as detailed out above. Thus, one of ordinary skill in the art would expect to have obtained nonporous silica particles absence evidence to the contrary specially motivated by the fact that neither Teller et al. nor the combination of

Teller et al. in view of Blizzard et al. make any indication to the production of porous silica.

Appellants have argued that Anselmann et al. do not disclose a process wherein the hydrolytic polycondensation of tetraalkoxysilane and/or organotrialkoxysilanes is performed in a medium comprising water, one or more solubilizers, and an amine, namely ethanolamine.

The Examiner, respectfully, submits that the above recited limitation, also claim 1 limitation, was addressed in the combination of Teller et al. in view of Blizzard et al. Anselmann et al., as specifically noted, was used for their clear disclosure on modifying the particle size by metering the addition of tetraalkoxysilane. It should be noted that Teller et al., also, disclose the simultaneous or step-wise dosage of precursor materials such as tetraalkoxysilane and terminal silane fluorescent dye in the medium. Therefore, Anselmann et al. only provides the motivation to do so which is also claimed in claim 2.

Appellants have argued that Trau et al. (another primary reference) in paragraphs [0020]-[0021] and [0025] disclose the production of porous organosilica spherical particles.

However, it is to be noted that said paragraph is not directed to the Stöber process disclosed in Trau et al.

**(11) Related Proceeding(s) Appendix**

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

/Pegah Parvini/

Examiner, Art Unit 1793

Conferees:

/J.A. LORENGO/

Supervisory Patent Examiner, Art Unit 1793

/Christopher A. Fiorilla/

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